

# **ANGULARLY ADJUSTABLE KEYBOARD SUPPORT BRACKET**

## **FIELD OF THE INVENTION**

The present invention relates to an angularly adjustable keyboard support bracket, and more particularly to a bracket that has a tray to hold a keyboard and can swivel angularly to the left and right side relative to the bracket to facilitate user operation.

## **BACKGROUND OF THE INVENTION**

10       The last decade has seen home computers spread like wildfire. . In order to facilitate user operation of the keyboard, save desktop space and also to take into account ergonomics to prevent wrist, neck and back injuries resulting from maintaining the same posture over a prolonged period,  
15      brackets have been developed and used to support the keyboard and make step-less adjustment to suit user's posture and hand positions.

Reference of keyboard bracket can be found in U.S. patent Nos. 4,616,798, 5,257,767, 5,924,664 , and U.S. patent 20 application Ser. No. 10/609,558 submitted by Applicant. All those patents still have drawbacks in terms of user operation angle, notably:

25      The screen generally is mounted on a near left side or right side of the desktop rather than in front of the user. When the user is operating the keyboard bracket, he/she has to look

at the screen in a biased manner. It tends to strain and fatigue the eyes and affect user's vision. Although the cited patent references mentioned above have a rotary tray between the bracket and the desktop, the perimeter area of the swivel angle 5 is based on the radius of the entire keyboard bracket, namely the swivel area takes a relatively large space. The space under the desktop and beside the bracket needs to be free to move. This is a big problem for people working in the office who often have limited space. Moreover, most users have cabinets 10 located under the desktop, and the space behind the chair is always limited. It is difficult to allocate adequate space for the swivel of the keyboard bracket. Hence, most keyboard brackets are used to adjust the elevation. The swivel function to turn the screen angularly to the left and right side is not 15 frequently used. Thus, the benefit of the keyboard bracket is not fully enjoyed.

### **SUMMARY OF THE INVENTION**

Therefore, the primary object of this invention is to solve the aforesaid disadvantages. The invention provides an 20 angularly adjustable keyboard support bracket that can be adjusted according to the viewing angle of the screen without fully pulling out the keyboard bracket and without the concern of limited space behind the user's chair. The invention mainly has a rotary mechanism located between the bracket and a tray 25 that can swivel left and right for a selected angle to offer users

a desired operating angle.

The foregoing, as well as additional objects, features and advantages of the invention will be more readily apparent from the following detailed description, which proceeds with  
5 reference to the accompanying drawings.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 is a perspective view of the present invention.

FIG. 2 is an exploded view of the present invention.

FIGS. 3A and 3B are schematic views of the present invention  
10 moving upwards and downwards relative to a desktop.

FIG. 4 is a schematic view of the invention swiveling to the left and the right side relative to the desktop.

FIGS. 5A and 5B are schematic views of the invention with  
the tray swiveling to left side and right side relative to the  
15 bracing rack.

#### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

Please refer to FIGS. 1, 2, 5A and 5B, the angularly adjustable keyboard support bracket according to the  
20 invention includes a bracket 10 which has a mounting rack 11 fastened to a desktop 20 (FIG. 3B), a movable arm 12 coupled with the mounting rack 11 through a pin a, and a bracing rack 13 coupling with the movable arm 12 on another end through another pin a for holding a tray 14. The bracing rack 13 is  
25 extended to form a holding section 131. There is a rotary

mechanism 15 located between the holding section 131 and the tray 14. The rotary mechanism 15 enables the tray 14 to swivel to the left side and the right side for a selected angle relative to the bracing rack 13 to provide users with a desired

5 operation angle. The rotary mechanism 15 includes an anchor tray 151 (which may be integrally formed with the bracing rack 13 by stamping) fastened to the bracing rack 13, a rotary tray 152 coupled with the tray 14 and a retaining element 153 located between the anchor tray 151 and the rotary tray 152.

10 The anchor tray 151 and the rotary tray 152 have respectively an anchor hole 1511 and 1521 to receive a fastening member 156 to run through the holding section 131 of the bracing rack 13 and the tray 14 for fastening. The anchor tray 151, rotary tray 152 and retaining element 153 have respectively an axle

15 hole b to couple with a bolt 154 to engage with a nut 155 for fastening.

Refer to FIGS. 3A and 3B for the movable arm 12 moving upwards and downwards relative to the desktop 20 according to the invention. As shown in the drawings, a rotary tray mechanism 16 is located between the mounting rack 11 and the desktop 20. Two sliding track blades 161 located on two sides of the rotary tray mechanism 16 couple with the sliding tracks 17 under the desktop 20. Through the sliding tracks 17, the bracket 10 may be pulled out at a distance

20 according to the space available behind user and the viewing

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distance. The elevation of operation may be adjusted to suit user's sitting posture by applying a linkage mechanism about the pin a that has been disclosed in the prior art (referring to the lifting and lowering structure of the bracket 10 taught in 5 previous patents).

In the event that the space behind the user is not adequate or the space under the desktop 20 is limited and cannot accommodate the movable arm 12, referring to FIG. 5A, first, the rotary mechanism 16 coupled on the rear end of the 10 mounting rack 11 may be used to swivel to the left side or right side for a selected angle within the allowable adjusting space. Alternatively, as shown in FIGS. 5A and 5B, when the user wants to change the keyboard operation position corresponding to the screen, he/she may directly exert a force 15 on the tray 14 to turn the tray about the bolt 154 relative to the bracing rack 13 to the left side or the right side for a desired angle. The retaining element 153 provides a frictional force that allows the tray 14 to remain stationary after the desired angle has been reached. Thereby the user can alter the 20 keyboard-operating angle within the limited space without viewing the screen in a biased manner. Therefore, fatigue and impact to user's vision can be reduced. Moreover, the rotary mechanism 15 of the invention may be directly adapted to the bracket 10 of the previous patents mentioned before to further 25 increase the applicability.

While the preferred embodiment of the invention has been set forth for the purpose of disclosure, modifications of the disclosed embodiment of the invention as well as other embodiments thereof may occur to those skilled in the art.

- 5 Accordingly, the appended claims are intended to cover all embodiments that do not depart from the spirit and scope of the invention.